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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,344	07/27/2001	In Kwon Jeong	9323.050.00-US	1220

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EXAMINER
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MACARTHUR, SYLVIA

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 09/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/917,344

Applicant(s)

JEONG, IN KWON

Examiner

Sylvia R. MacArthur

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3-70 is/are pending in the application.
- 4a) Of the above claim(s) 24-66 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-23 and 67-70 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 3-8, 10-21, 23, and 67-70 are rejected under 35 U.S.C. 102(b) as being anticipated by Aizawa et al (US 6,036,582).

Regarding claim 10, and 21: Aizawa teaches polishing units 10a, 10b. have pushers 34 for transferring the wafers from the polishers, see col. 5 lines 14-26.

Regarding claim 8: Aizawa cites that buffing unit 200 (post polishing unit/first object cleaner) serves to clean the semiconductor wafers which have been polished by the polishing units 10a, 10b.

Regarding claims 3, 6, and 7: Aizawa teaches a loading/unloading unit 14 (supply unit) housing a pair of storage cassettes 12a, 12b (object storage housing).

Regarding claim 11: The robots 20a, 20b are disposed on rails 16a, 16b to have access to different sections of the supply unit.

Regarding claims 12-16, cleaning devices 26a-26c (second-fourth object cleaners) are discussed in col. 6 lines 38-47

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Regarding claims 4, 5, 17-20 and 23: The four hands 38-38d provided on robots 20a and 20b are movable vertically for entry into the upper or lower space in delivery gate 18. Col. 7 lines 15-29 cite that a loading/unloading unit 14 is provided.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-8, 10-21, 23, and 67-70 are rejected under 35 U.S.C. 103 as being unpatentable over Aizawa in view of Brown.

Regarding claim 1, 10, and 21: Aizawa teaches polishing units 10a, 10b.

have pushers 34 for transferring the wafers from the polishers, see col. 5 lines 14-26.

In the narrower sense of a transfer robot, Aizawa fails to teach a plurality of robots accessible to the same processing chamber as recited in claim 67.

Brown et al teaches a dual independent robot blades with minimal offset.

Col. 3 lines 42-51 teaches two sets of robot arms 16, 22 and blades 18, 26 that can independently access the same chamber. The motivation for the modification of the robot of Aizawa is to utilize the teachings of Brown et al is to improve throughput. According to In re Dulberg 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961), it is obvious to make an apparatus separable/integral. In this case a robot with two arms granting independent access to the same chamber is an obvious modification for two separate robots each having one arm and providing access to the same chamber.

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Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to modify the robot of Aizawa with the teachings of Brown et al.

Regarding claims 2 and 8: Aizawa cites that buffing unit 200 (post polishing unit/first object cleaner) serves to clean the semiconductor wafers which have been polished by the polishing units 10a, 10b.

Regarding claims 3, 6, and 7: Aizawa teaches a loading/unloading unit 14 (supply unit) housing a pair of storage cassettes 12a, 12b (object storage housing).

Regarding claim 11: The robots 20a, 20b are disposed on rails 16a, 16b to have access to different sections of the supply unit.

Regarding claims 12-16, cleaning devices 26a-26c (second-fourth object cleaners) are discussed in col. 6 lines 38-47

Regarding claims 4, 5, 17-20 and 23: The four hands 38-38d provided on robots 20a and 20b are movable vertically for entry into the upper or lower space in delivery gate 18. Col. 7 lines 15-29 cite that a loading/unloading unit 14 is provided.

5. Claims 9 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aizawa in view of Wang (US 5,948,203).

The teachings of Aizawa were discussed above.

Aizawa fails to teach a thickness measurement unit.

Wang teaches an optical dielectric thickness monitor 42 for CMP (a form of cleaning). The motivation to provide the monitor in a cleaning device as cited by Wang in

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col. 3 lines 6-19 is that it provides timely thickness measurements on the layer being cleaning. Thus, ensuring a more efficient and reliable cleaning process.

It would have been obvious to modify the apparatus of Aizawa with the thickness monitor of Wang to ensure the efficient optimal cleaning result.

6. Claims 9 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aizawa in view of Brown et al as applied to claims 3-8, 10-21, 23, and 67-70, and in further view of Wang (US 5,948,203).

The teachings of Aizawa and Brown et al were discussed above.

Aizawa fails to teach a thickness measurement unit.

Wang teaches an optical dielectric thickness monitor 42 for CMP (a form of cleaning). The motivation to provide the monitor in a cleaning device as cited by Wang in col. 3 lines 6-19 is that it provides timely thickness measurements on the layer being cleaning. Thus, ensuring a more efficient and reliable cleaning process.

It would have been obvious to modify the apparatus of Aizawa modified by Brown et al with the thickness monitor of Wang to ensure the efficient optimal cleaning result.

### ***Response to Arguments***

7. Applicant's arguments filed 5/14/2004 have been fully considered but they are not persuasive. In col.5 lines 14-26 Aizawa et al teaches pushers 34 which are used to transfer wafers to the top rings of polishing units 10a,b. The transfer robots as claimed are only required to be capable of transferring wafers to/from the polishing unit. In this case the pushers are capable of

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such transfer as they provide vertical movement of the wafers to /from the top rings of the polishing units.

8. Considering the amendment to the claims in light of the specification with a narrower scope of transfer robot the 103 rejection of Aizawa et al in combination with Brown et al was introduced.

### *Conclusion*

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 9 a.m. and 3 p.m.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sylvia R MacArthur  
Patent Examiner  
Art Unit 1763

September 21, 2005



**PARVIZ HASSANZADEH**  
**SUPERVISORY PATENT EXAMINER**